

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims

Claim 1 (Original). A tissue puncture closure assembly, comprising:
a tissue puncture closure device having a distal and a proximal end;
a vascular insertion sheath having a distal and a proximal end;
wherein the distal end of the insertion sheath comprises a tip portion that is stiffer than insertion sheath portions adjacent to the tip portion.

Claim 2 (Original). A tissue puncture closure assembly according to claim 1 wherein the tip portion comprises a concave fold.

Claim 3 (Original). A tissue puncture closure assembly according to claim 2 wherein the concave fold comprises no more than half of a circumference of the insertion sheath.

Claim 4 (Original). A tissue puncture closure assembly according to claim 1 wherein the stiffer tip portion comprises a wall thickness greater than a wall thickness of the insertion sheath adjacent to the tip portion.

Claim 5 (Original). A tissue puncture closure assembly according to claim 1 wherein the stiffer tip portion comprises a second layer of material.

Claim 6 (Original). A tissue puncture closure assembly according to claim 5 wherein the second layer of material is disposed substantially along a concave fold of the stiffer tip portion.

Claim 7 (Original). A tissue puncture closure assembly according to claim 5 wherein the second layer of material is disposed only along an edge of the stiffer tip portion.

Claim 8 (Original). A tissue puncture closure assembly according to claim 1 wherein the stiffer tip portion comprises at least one stiffening ridge.

Claim 9 (Original). A tissue puncture closure assembly according to claim 8 wherein the stiffer tip portion comprises at least two stiffening ridges.

Claim 10 (Original). A tissue puncture closure assembly according to claim 8 wherein the at least one stiffening ridge is arranged substantially orthogonal to a longitudinal axis of the insertion sheath.

Claim 11 (Original). A tissue puncture closure assembly according to claim 1 wherein the stiffer tip portion comprises a corrugated section.

Claim 12 (Original). A tissue puncture closure assembly according to claim 12 wherein the corrugated section is disposed transverse to a longitudinal axis of the insertion sheath.

Claim 13 (Original). A tissue puncture closure assembly according to claim 1 wherein the closure device comprises:

- a filament extending from the proximal end of the closure device to the distal end of the closure device;

- an anchor for insertion through a tissue wall puncture attached to the filament at the distal end of the closure device;

- a sealing plug slidably disposed about the filament at the distal end of the closure device.

Claim 14 (Original). A vascular insertion sheath, comprising:

- a flexible tubular member having a longitudinal axis, a distal end, and a proximal end;

- a hemostatic valve coupled to the proximal end of the tubular member;

- a fold at the distal end of the tubular member, the fold comprising a higher stiffness coefficient than the tubular member.

Claim 15 (Original). A vascular insertion sheath according to claim 14, further comprising a layer of material over the fold to provide the higher stiffness coefficient.

Claim 16 (Original). A vascular insertion sheath according to claim 15 wherein the layer of material is placed only at an edge of the fold.

Claim 17 (Original). A vascular insertion sheath according to claim 14 wherein at least a portion of the fold comprises a thicker wall than the flexible tubular member.

Claim 18 (Original). A vascular insertion sheath according to claim 17 wherein only an edge of the fold comprises a thicker wall than the flexible tubular member.

Claim 19 (Original). A vascular insertion sheath according to claim 14, further comprising at least one stiffening ridge across the fold transverse to the longitudinal axis.

Claim 20 (Original). A vascular insertion sheath according to claim 14 wherein the fold is corrugated.

Claim 21 (Original). A vascular insertion sheath according to claim 20 wherein the corrugated fold is corrugated in a direction transverse to the longitudinal axis.

Claim 22 (Withdrawn). A method of reducing anchor shuttle in a tissue puncture closure assembly, comprising stiffening a tip portion of an insertion sheath receptive of a tissue puncture closure device.

Claim 23 (Withdrawn). A method of reducing anchor shuttle in a tissue puncture closure assembly according to claim 22 wherein the stiffening further comprises increasing a wall thickness of the tip portion of the insertion sheath.

Claim 24 (Withdrawn). A method of reducing anchor shuttle in a tissue puncture closure assembly according to claim 23, further comprising increasing the wall thickness of only a folded section of the tip portion.

Claim 25 (Withdrawn). A method of reducing anchor shuttle in a tissue puncture closure assembly according to claim 23, further comprising increasing the wall thickness of only an edge of the tip portion.

Claim 26 (Withdrawn) A method of reducing anchor shuttle in a tissue puncture closure assembly according to claim 22 wherein the stiffening further comprises applying a layer of material to the tip portion of the insertion sheath.

Claim 27 (Withdrawn). A method of reducing anchor shuttle in a tissue puncture closure assembly according to claim 25 wherein the stiffening further comprises applying a layer of material only to a folded section of the tip portion of the insertion sheath.

Claim 28 (Withdrawn). A method of reducing anchor shuttle in a tissue puncture closure assembly according to claim 22 wherein the stiffening further comprises corrugating the tip portion of the insertion sheath.

Claim 29 (Withdrawn). A method of reducing anchor shuttle in a tissue puncture closure assembly according to claim 28 wherein the corrugating is done in a direction transverse to a longitudinal axis of the insertion sheath.

Claim 30 (Withdrawn). A method of reducing anchor shuttle in a tissue puncture closure assembly according to claim 28 wherein the corrugating is done only in a folded section of the tip portion.

Claim 31 (Withdrawn). A method of reducing anchor shuttle in a tissue puncture closure assembly according to claim 22 wherein the stiffening further comprises adding a ridge across the tip portion in a direction transverse to a longitudinal axis of the insertion sheath.

Claim 32 (Withdrawn). A method of reducing anchor shuttle in a tissue puncture closure assembly according to claim 31 wherein the stiffening comprises adding a ridge only across a folded section of the tip portion.

Claim 33 (Withdrawn). A method of making a vascular insertion sheath, comprising:

providing a flexible tubular member receptive of a puncture closure device;
tapering an end portion of the flexible tubular member;
folding a section of the end portion into a concave depression;
stiffening at least a portion of the concave depression.

Claim 34 (Withdrawn). A method of making a vascular insertion sheath according to claim 33 wherein the tapering comprises inserting the flexible tubular member into a heated die and reforming the end portion.

Claim 35 (Withdrawn). A method of making a vascular insertion sheath according to claim 33 wherein the folding further comprises inserting the flexible tubular member into a heated die and reforming the end portion.

Claim 36 (Withdrawn). A method of making a vascular insertion sheath according to claim 33 wherein the stiffening further comprises inserting the flexible tubular member into a heated die and reforming at least part of the end portion into a thicker wall or a corrugated section.

Claim 37 (Withdrawn). A method of making a vascular insertion sheath according to claim 36 wherein only a folded section or an edge of the folded section is reformed into the thicker wall or corrugated section.

Claim 38 (Withdrawn). A method of making a vascular insertion sheath according to claim 33 wherein the stiffening further comprises applying a layer of material to at least part of the end portion.

Claim 39 (Withdrawn). A method of making a vascular insertion sheath according to claim 33 wherein the stiffening further comprises adding a ridge across the end portion in a direction transverse to a longitudinal axis of the flexible tubular member.

Claim 40 (Withdrawn). A tissue puncture closure assembly, comprising:

a closure device for partial insertion into and sealing of an internal tissue wall puncture, the closure device comprising:

a carrier tube having an anchor nest at a distal end;

a filament extending through the carrier tube;

an anchor attached to the filament at the distal end of the carrier tube and seated in the anchor nest;

an insertion sheath receptive of the carrier tube of the closure device, the insertion sheath comprising:

a flexible tubular member having a longitudinal axis, a distal end, and a proximal end;

a hemostatic valve coupled to the proximal end of the tubular member;

a fold at the distal end of the tubular member, the fold comprising a higher stiffness coefficient than the tubular member.

Claim 41 (Withdrawn). A method of sealing a tissue puncture in an internal tissue wall accessible through a percutaneous incision, comprising:

providing a tissue puncture closure device comprising a carrier tube with a filament extending therethrough, the filament connected at a distal end of the carrier tube to an anchor, the anchor seated in a nest disposed in the carrier tube, the filament also connected to a sealing plug located proximal of the anchor for disposition and anchoring about the tissue puncture;

inserting the tissue puncture closure device through an insertion sheath having a stiffened tip portion into the percutaneous incision;

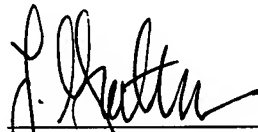
deploying the anchor into the tissue puncture;

withdrawing the closure device from the percutaneous incision;

tamping the sealing plug toward the anchor.

Respectfully submitted,

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